

## **REMARKS**

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of November 1, 2005 is respectfully requested.

In order to make necessary editorial corrections, the entire specification and abstract have been reviewed and revised. As the revisions are quite extensive, the amendments to the specification and abstract have been incorporated into the attached substitute specification and abstract. For the Examiner's benefit, a marked-up copy of the specification indicating the changes made thereto is also enclosed. No new matter has been added by the revisions. Entry of the substitute specification is thus respectfully requested.

In the outstanding Office Action, the Examiner rejected claims 1, 3-7, 9, 11-15, 17, and 18 as being anticipated by the Yanashima reference (US Patent Application 2002/0140309); and rejected claims 2, 8, 10, 16, 19, and 20 as being unpatentable over the Yanashima reference in view of the Nacewicz reference (US 5,617,001). However, the original claims, including independent claims 1 and 9, have now been amended as indicated above. In addition, new claims 21-32, including independent claims 21, 23, 25, 27, 29, and 31, have been added. For the reasons discussed below, it is respectfully submitted that the amended and new claims are clearly patentable over the prior art of record.

Amended independent claim 1 is directed to a synchronous induction motor and amended independent claim 9 is directed to an electric hermetic compressor including a synchronous induction motor. Each of amended independent claims 1 and 9 recite that the synchronous induction motor comprises a *stator* that includes a starting capacitor connected in series with an auxiliary winding, a *positive temperature coefficient thermistor connected in series with the* auxiliary winding and the starting capacitor, and a switching unit. The switching unit is operable to close a circuit to the auxiliary winding from the starting capacitor when the synchronous induction motor is at rest, and is operable to open the circuit and thereby *cut off current flowing* to the positive temperature thermistor after the synchronous induction motor is started.

The Yanashima reference is directed to a synchronous induction motor including starting capacitors 48, a start-up relay 61, and a stator winding 7. As explained in paragraph [0235], the



Starting capacitors 48 and the start-up relay 61 form a starter for a motor 2. In the outstanding Office Action, the Examiner asserted that the Yanashima reference also teaches "a bimetal switch 64 having positive temperature coefficient thermistor." As illustrated in Figure 56, the bimetal switch 64 is arranged in series with the primary winding 7A. However, as clearly explained in paragraph [0236], the bimetal switch 64 functions as a safety device *after the synchronous induction motor has been started* (i.e., during normal operation), rather than a component of the starter. In other words, the bimetal switch 64 is arranged in series with the primary winding 7A of the stator winding 7 so that current flowing through the primary winding 7A also flows through the bimetal switch 64 after the synchronous induction motor has been started. Consequently, the Yanashima reference does not disclose or suggest a positive temperature coefficient thermistor of a starter, in which a starting unit is operable to open a circuit to thereby cut off current flowing to the positive temperature thermistor after the synchronous induction motor is started.

The Nacewicz reference is directed to an AC motor starting control circuit. However, the Nacewicz reference does not disclose or suggest a starter including a positive temperature coefficient thermistor and a switching unit arranged as recited in amended independent claims 1 and 9. Therefore, one of ordinary skill in the art would not be motivated to modify the Yanashima reference so as to obtain the starter as recited in amended independent claims 1 and 9. Accordingly, it is respectfully submitted that amended independent claims 1 and 9, and the claims that depend therefrom, are clearly patentable over the prior art of record.

New independent claim 21 is directed to a synchronous induction motor, and new independent claim 23 is directed to an electric hermetic compressor including a synchronous induction motor. Each of independent claims 21 and 23 recite that the synchronous induction motor includes a starter which includes a starting capacitor and a switching unit *operable to close* a circuit to the auxiliary winding from the starting capacitor when the synchronous induction motor is at rest, and to open the circuit after the synchronous induction motor is started.

The Examiner acknowledged that the Yanashima reference <u>does not</u> teach a triac in a switching unit. However, the Examiner asserted that the Nacewicz reference teaches using a



trigger semiconductor switching device including a triac and a resistor corresponding to a trigger circuit. However, it is submitted that the Nacewicz reference does not disclose or suggest a switching unit operable in the manner recited in new independent claims 21 and 23. Therefore, one of ordinary skill in the art would not be motivated by the Nacewicz reference to modify the Yanashima reference so as to obtain the invention recited in new independent claims 21 and 23. Accordingly, it is respectfully submitted that new independent claims 21 and 23 are clearly patentable over the prior art of record.

The Examiner is also requested to note that new dependent claims 22 and 24 each present subject matter that further distinguishes the invention recited in independent claims 21 and 23 from the prior art, respectively. Therefore, in view of this additional distinguishing subject matter of dependent claims 22 and 24, it is respectfully submitted that dependent claims 22 and 24 are further patentable over the prior art of record.

New independent claim 25 is directed to a synchronous induction motor, and new independent claim 27 is directed to an electric hermetic compressor including a synchronous induction motor. The synchronous induction motor of each of independent claims 25 and 27 includes a starter including a starting capacitor and a switching unit. The switching unit includes a bimetal switch connected in series with a circuit to the auxiliary winding, and a heating element connected in parallel with the bimetal switch so as to thermally affect the bimetal switch.

As noted above, the Examiner asserted that the Yanashima reference teaches a bimetal switch 64 having a positive temperature coefficient thermistor (see paragraph [0236]). However, the Yanashima reference does not disclose or suggest a *starter* including a switching unit, wherein the switching unit includes a bimetal switch (i.e., the bimetal switch is a component of the starter). In contrast, the bimetal switch of the Yanashima reference is used as a safety device rather than as a component of the starter. Moreover, the Yanashima reference does not disclose or even suggest a *heating element* of any type, and thus also does not disclose or suggest a heating element connected *in parallel with* the bimetal switch.

The Nacewicz reference also <u>does not</u> disclose or suggest a starter including a switching unit, in which the switching unit includes a bimetal switch and a heating element arranged as



recited in new independent claims 25 and 27. Therefore, one of ordinary skill in the art would not be motivated by the Nacewicz reference to modify the Yanashima reference so as to obtain the invention recited in new independent claims 25 and 27. Accordingly, it is respectfully submitted that new independent claims 25 and 27, and the claims that depend therefrom, are clearly patentable over the prior art of record.

New independent claim 29 is directed to a synchronous induction motor, and new independent claim 31 is directed to an electric hermetic compressor that includes a synchronous induction motor. The synchronous induction motor of each of new independent claims 29 and 31 comprises a starter including a starting capacitor and a current relay. The current relay includes a coil connected in series with the main winding of a stator of the synchronous induction motor, a movable contact driven by the coil, and a fixed contact connected in series with the circuit.

As noted above, the Yanashima reference teaches a start-up relay 61. As clearly illustrated in Figure 56, the start relay coil 61A of the start-up relay 61 is *in parallel* with both the primary winding 7A and the auxiliary winding 7B of the stator 7. However, the Yanashima reference does not disclose or suggest a coil of a current relay that is connected *in series with* a main winding of a stator.

The Nacewicz reference <u>does not</u> disclose or even suggest a starter including a current relay, in which the current relay includes a coil connected in series with a main winding of a stator. Therefore, one of ordinary skill in the art would not be motivated by the Nacewicz reference to modify the Yanashima reference so as to obtain the invention recited in new independent claims 29 and 31. Accordingly, it is respectfully submitted that new independent claims 29 and 31, and the claims that depend therefrom, are clearly patentable over the prior art of record.

المراجع المرواء

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

Keizo IIDA

W. Douglas Hahm

Registration No. 44,142 Attorney for Applicant

WDH/ck Washington, D.C. 20006-1021 Telephone (202) 721-8200 Facsimile (202) 721-8250 February 1, 2006